REMARKS

FORMAL MATTERS:

Claims 77-101 and 107-108 are pending.

Claims 77-101 were rejected.

Support for new claims 107 and 108 is found in page 17, page 26, page 27, Fig. 1A and Fig. 1B. No new matter is added.

In view of the remarks set forth below, reconsideration of this application is respectfully requested.

DRAWINGS

Replacement drawings are provided herewith and it is believed that this objection has been addressed. Withdrawal of this rejection is requested.

REJECTION UNDER §101

Claims 77-101 stand rejected under 35 U.S.C. § 101 as lacking patentable utility. The Applicants respectfully traverse this rejection.

In their prior response, the Applicants argued that the claimed polynucleotide has a variety of diagnostic and therapeutic utilities because the encoded GPCR (hARE-2) is selectively expressed in the *substantia nigra* – the same area of the brain that degenerates in Parkinson's disease. The Applicants believe that the claimed subject matter has patentable utility because hARE-2 can be used to: a) modulate the levels of intracellular signaling molecules in cells of the *substantia nigra* and/or b) evaluate brain tissues such as in Parkinson's disease.

In the present Office Action, the Examiner contends that, in essence, only a subset of cells of the *substantia nigra* (i.e., dopaminergic cells) die during Parkinson's disease and that the Applicants have provided no evidence that hARE-2 is expressed in those cells. Thus, according to the Examiner, there is no nexus between hARE-2 and the asserted utilities of hARE-2.

The Applicants submit, however, that any gene that is selectively expressed in the *substantia nigra* is useful as a probe for the analysis of cell degeneration of the *substantia nigra*, whether or not the gene is specifically expressed in dopaminergic cells.

For example, it is known that the *substantia nigra* undergoes extensive degeneration during Parkinson's disease. As such, the claimed polynucleotide may be used in a number of applications, including: a) the analysis of a brain for disease-related changes in the architecture of the *substantia nigra*; b) to evaluate generalized cell damage verses cell type-specific damage in the *substantia nigra*; and c) as a marker for counting cells in the *substantia nigra* in order to provide an evaluation of disease severity. None of these uses requires that the claimed polynucleotide be specifically expressed in dopaminergic cells.

Such utilities are specific and substantial in that Parkinson's disease afflicts millions of individuals around the world, and credible in that the Applicants have provided data showing that hARE-2 is selectively expressed in the *substantia nigra*. Further, with respect to *Brenner v. Manson*, the Applicants submit that the above-described uses may be performed in the absence of further analysis of the hARE-2 protein or gene. As such, the proposed utilities are not unacceptable "self-testing" utilities.

In essence, the Applicants submit that if the claimed polynucleotide does not specifically identify dopaminergic cells in the *substantia nigra*, then it is still useful for analyzing architecture, identifying landmarks and performing cell counts in that area. Since dopaminergic cells die during Parkinson's disease and it is difficult to detect dead cells directly, probes for both dopaminergic cells *and* non-dopaminergic cells are useful.

In view of the foregoing discussion, it is believed that the claimed polynucleotide meets the utility requirement of 35 U.S.C. §101 and this rejection should be withdrawn.

Further, and in keeping with the above, the Applicants submit that once provided with the knowledge that hARE-2 is expressed selectively in the *substantia nigra*, a person of ordinary skill in the art would readily appreciate that the claimed polynucleotide is useful for monitoring the production of *substantia nigra* cells in *in vitro* development systems (e.g., systems for generating *substantia nigra* cells from neural stem cells). Stem cell-based treatments for the treatments of Parkinson's disease have long been of intense interest in the medical community (see, e.g., Baetge Neural stem cells for CNS transplantation. Ann. N.Y. Acad. Sci. 1993 695: 285-91), and tissue-specific markers such as hARE-2 have use as markers for monitoring the development of such cells.

In addition to the above, the claimed polynucleotide can also be employed to discriminate between a human tissue selected from the right cerebellum, left cerebellum, or *substantia nigra* and an other human tissue. This utility, like the other utilities discussed above, is specific, substantial and credible given the data provided in the instant application.

The Applicants have focused the foregoing discussion on specific uses of the claimed polynucleotide. Because the instant specification describes the polypeptide encoded by the claimed polynucleotide, additional diagnostic uses involving the polypeptide or antibody that binds the same would be apparent to one of skill in the art. Since the Applicants believe that this rejection is adequately addressed by the foregoing discussion, these additional diagnostic uses are not discussed herein.

The Applicants submit that this rejection has been adequately addressed and should be withdrawn. In the event that this argument is not persuasive, the Applicants hereby preserve the prior arguments for appeal.

REJECTION UNDER §112, FIRST PARAGRAPH

Claims 77-101 stand rejected under 35 U.S.C. § 112, first paragraph, as lacking patentable utility.

This rejection is addressed in the previous section of this response.

Withdrawal of this rejection is requested.

CONCLUSION

Applicant submits that all of the claims are in condition for allowance, which action is requested. If the Examiner finds that a telephone conference would expedite the prosecution of this application, please telephone the undersigned at the number provided.

The Commissioner is hereby authorized to charge any underpayment of fees associated with this communication, including any necessary fees for extensions of time, or credit any overpayment to Deposit Account No. 50-0815, order number AREN-011DIV.

Respectfully submitted,
BOZICEVIC, FIELD & FRANCIS LLP

Date: March 3, 2008

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Enclosures: Replacement sheets of drawings

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